

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-10 (cancelled)

11. (currently amended) A catheter comprising:
an elongated catheter shaft having a lumen; and
a ~~solid-walled~~ variable stiffness mandrel disposed in said shaft lumen,
having a solid core comprised of a non-metal material, ~~said mandrel~~ and having ~~[[a]]~~ an
annealed proximal section with a first crystallinity and a distal section with a second
crystallinity lower than said proximal section first crystallinity such that the proximal
section is stiffer than the distal section.

12. (previously presented) The catheter of claim 11 wherein said material is
selected from the group consisting of polyamides, PEEK, PPS, PEI, PI, and any
combination thereof.

13. (previously presented) The catheter of claim 11 wherein said proximal
section is larger than a diameter of said distal section of said mandrel.

14. (currently amended) The catheter of claim 11 further comprising an
inflatable member secured to the catheter shaft ~~comprising a proximal portion, a distal~~

~~portion~~, wherein said distal section of said mandrel extends to a location along the length of the catheter located in the ~~inflatable interior of said inflatable member~~.

15. (currently amended) The catheter of claim ~~[[14]]~~ 11 ~~wherein said distal section of said mandrel extends to a location along the length of the catheter located at the distal end of the inflatable interior of said inflatable member~~ further comprising an inflatable member secured to the catheter shaft, and wherein the distal section of the mandrel extends to a location proximal to the inflatable member.

16. (currently amended) The catheter of claim 11 wherein ~~said mandrel is formed by annealing to induce a higher crystallinity such that said proximal section is stiffer than said distal section~~ the mandrel is fusion bonded to the catheter shaft.

17. (previously presented) The catheter of claim 11 wherein said mandrel is formed by necking at high temperatures such that said proximal section is stiffer than said distal section.

18. (previously presented) The catheter of claim 11 wherein said mandrel is formed by taper extruding such that said proximal section is stiffer than said distal section.

19. (currently amended) A catheter comprising:
- an outer member;
 - a hollow inner member extending through said outer member;
 - an outer lumen between said inner and outer members; and

a non-metal mandrel formed of a polyetheretherketone polymeric material, extending through said outer lumen, ~~[[,]]~~said mandrel having ~~[[a]]~~ an annealed proximal section having a first crystallinity and a distal section having a second crystallinity lower than the proximal section first crystallinity, and being uniformly tapered from the proximal section to the distal section.

20. (cancelled)

21. (previously presented) The catheter of claim 19 wherein a diameter of said proximal section is larger than a diameter of said distal section of said uniformly tapered mandrel.

22. (currently amended) The catheter of claim 19 further comprising an inflatable member having an inflatable interior, and comprising a proximal portion secured to a distal portion of the outer member and a distal portion secured to a distal portion of the inner member, wherein said distal section of said mandrel extends ~~past said proximal portion of said inflatable member~~ to a location along the length of the catheter located in the ~~inflatable interior of the~~ inflatable member.

23. (currently amended) The catheter of claim ~~[[22]]~~ 19 further including an inflatable member secured to the outer member and the hollow inner member with an interior in fluid communication with the outer lumen and wherein the distal section of the mandrel extends to a location proximal to the inflatable member ~~wherein said distal~~

~~section of said mandrel extends to a distal end of the inflatable interior of said inflatable member.~~

24. (cancelled)

25. (previously presented) The catheter of claim 19 wherein said mandrel is formed by necking at high temperatures such that said proximal section is stiffer than said distal section.

26. (previously presented) The catheter of claim 19 wherein said mandrel is formed by taper extruding each such that said proximal section is stiffer than said distal section.

Claims 27-50 (cancelled)

51. (currently amended) A catheter, comprising:
an elongated shaft having an inflation lumen;
a balloon secured to a distal portion of the shaft with an interior in fluid communication with the inflation lumen; and
a non-metal material mandrel in the elongated shaft, ~~formed of a polyetheretherketone polymeric material~~, and comprising [[a]] an annealed proximal section having a first crystallinity and a distal section having a second crystallinity lower than the first crystallinity of the proximal section, said mandrel uniformly tapered from said proximal section to said distal section, such that said proximal section is stiffer than

said distal section, ~~and extending to a location along the length of the elongated shaft~~
~~located in the inflatable interior of the balloon.~~

52. (cancelled)

53. (currently amended) The catheter of claim ~~[[52]]~~ 51 wherein ~~said distal~~
~~section of said mandrel extends to a distal end of the inflatable interior of said inflatable~~
~~member~~ the mandrel is formed of a polyetheretherketone polymeric material.

Claims 54-55 (cancelled)

56. (currently amended) The apparatus of claim 51 wherein ~~a diameter of said~~
~~proximal section is larger than a diameter of said distal section of said uniformly tapered~~
~~mandrel~~ the mandrel has a diameter tapering from the proximal end of the mandrel to the
distal end of the mandrel.

57. (previously presented) The catheter of claim 11 wherein said mandrel is
fixed to a catheter shaft to lock said mandrel in place relative to said catheter shaft.

58. (previously presented) The catheter of claim 11 further comprising an inner
tubular member disposed near said mandrel, wherein said inner tubular member is
adapted to receive a guidewire.

59. (previously presented) The catheter of claim 19, wherein said mandrel is
fixed to lock said mandrel in place relative to said catheter outer member.

60. (previously presented) The catheter of claim 19 wherein said hollow inner member is adapted to receive a guidewire.

Claims 61-63 (cancelled)

64. (currently amended) The apparatus of claim 51 wherein said mandrel is ~~fixed to said catheter~~ formed of a polymer compatible with a polymer forming the catheter shaft, and the mandrel is fusion bonded to the catheter shaft to lock said mandrel in place relative to said catheter.

65. (previously presented) The apparatus of claim 51 further comprising an inner tubular member disposed within said catheter and adapted to receive a guidewire.